

Work Order ID 154348

Friday, December 09, 2016 9:14:14 AM

154348

Page 1

Item ID: 644.4111

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Bracket, Aft Pivot

Stop *NS2*

Start Date: 12/9/2016 **Start Qty:** 7.00

7

Cust Item ID:

Required Date: 12/23/2016 **Req'd Qty:** 7.00

7

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
2ACI 3A JRP									
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.02

Quality Control

① ① 16-12-20

DAS

9

9-89

130

Form as per dwg
NC BRAKE

0.03

130

Brake NC

Memo

0.02

Brake NC

DAS
30
9-89

⑦

JAN 09 2017

140

QC5- Inspect part completeness to step on W/O

0.00

140

QC

Memo

0.02

Quality Control

2

DAS

38

9-89

JAN 11 2017

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

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Date :	Step #:	QTY Effective :		MRB (QSI042) Approval DAS 9 9-89 16-1230	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
<i>took 1 for qc template</i>					

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
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Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
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Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date ☐	☐	Manufacturing Process	☐				
Misidentified ☐	☐	Past Due	☐				
				OTHER :			

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Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

Outsource process-Anodize per QSI017 4.1.10.1

0.00

150

Outsource4

Memo

84.00

Issue P/O to ATG :

34919

1- Black Anodize as per Dwg, see note 4.

Certification of Conformity is required

7

JAN 12 2017

DAS
13
9-89

160

Receive & Inspect for Damage & Mat'l Certs

0.00

160

Packaging

Memo

0.02

Packaging

7x SPH-01-17

170

QC5- Inspect part completeness to step on W/O

0.00

170

QC

Memo

0.02

Quality Control

7DAS
38
9-89

JAN 17 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:12.5%;">Skid-tube ☐</td> <td style="width:12.5%;">Cross tube ☐</td> <td style="width:12.5%;">Water Jet ☐</td> <td style="width:12.5%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																							
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OTHER : _____																																																															

FEB 07 2017

DQA: Art Date: 2017-04-05QA Closed: Roll Date: APR 01 2017 **WORK ORDER NON-CONFORMANCE / UPDATE**Work Order update only ☐

Work Order: <u>154348</u> Part No. <u>644. 4111</u> NCR No. <u>17-6338</u>	DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☒</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☒	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																
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Date: <u>17-01-30</u>	Step #: <u>130</u>	QTY Effective: <u>①</u>	MRB (QSI042) Approval DAS 9 9-89 <u>17-01-30</u>																																																																	
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<u>excessive runs found in point</u> <u>RAC. process</u> <u>0.79</u>		<u>- strip point</u> <u>- re point</u> <u>* make sure anodize is not damage before painting *</u> <u>Primer # 136429</u> <u>Paint # 136434</u>		Completed By DAS 38 9-89 <u>17-3-13</u> Lead hand / Supervisor Approval Verification DAS 38 9-89 <u>FEB 07 2017</u> QC / QA Coordinator Approval DAS 38 9-89 <u>FEB 07 2017</u>																																																																
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N900040100

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NS1

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NS2

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Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210

QC21- Final Inspection - Work Order Release

0.00

210

QC

Memo

0.12

Quality Control

17/2/8 78

FEB 07 2017

DAS
21
9-88

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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OTHER : ☐					

Picklist Print

Friday, December 09, 2016 9:14:17 AM

Page 1

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154348

Parent Item: 644.4111

644 4111

Parent Item Name: Bracket, Aft Pivot

Start Date: 12/9/2016

Required Date: 12/23/2016

Start Qty: 7.00

Required Qty: 7.00

Comments: IPP REV:A 16.12.07 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M2024T3S.125		Purchased	No				sf	8.7000		4.907368	DAS 46 9-89	10/12/20	
M2024T3S 125									**				
2024-T3 .125 sheet													

Location

Loc Qty

Loc Code

MAT021

8.7

M127668

8.7

M136430

4.3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>					Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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Description Work Order Deviation		Disposition																																																																		
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		OTHER :																																																																		

APICAL

INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO. 04489

SHEET 1 OF 1

DWG NO. 644.4100

REV: F

PREPARED BY:

J. BECKER

DATE: 04/08/14

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: PIVOT STEP ASSY

APPROVED BY:

ENGR

MFG

QC

EFF:

NEXT ORDER

TRANSACTION
A-ADD
R-REVISE

CODES (TC):
C-CREATE
D-DELETE

REASON: UPDATE NOTE 4, FINISH SPECIFICATION.

NOTES:

IDENTIFY ALL PARTS IN ACCORDANCE WITH MPP-120

MATERIAL: 2024-T3 ALUMINUM

MATERIAL: 6061-T6 ALUMINUM

FINISH IAW MPP-172 SECTION 2.1, SECTION 3.1, SECTION 4.1, SECTION 5.2.

MATERIAL: MDS-FILLED NYLON 6/6 SHEET, CUT OD CIRCLE USING 2" GASKET PUNCH,
CUT ID HOLE USING 1/4" GASKET PUNCH

MATERIAL: MDS-FILLED NYLON 6/6 SHEET, CUT OD CIRCLE USING 2" GASKET PUNCH,
CUT ID HOLE USING 5/16" GASKET PUNCH

DIMENSION VALUE HAS FINISH COATING OF 6-10 MIL (.006-.010) TAKEN INTO
CONSIDERATION

8. ADD ADDITIONAL WASHER UNDERNEATH CASTLE NUTS IF NECESSARY.

FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III CLASS 2, COLOR BLACK.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 154348 MJS
16-12-09

SHEET 1, NOTES IS:

DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRUC ☐ ICA ☐ BOM

CHANGE CATEGORY
☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED
☐ YES ☒ NO

INDUSTRIES, INC.

04286

SHEET 1 OF 1

REV: F

PREPARED BY J. SOTO

DATE: 12/04/2013

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: PIVOT STEP ASSY

APPROVED BY: ENGR *T. Brown*

MFG DEB-1

QC

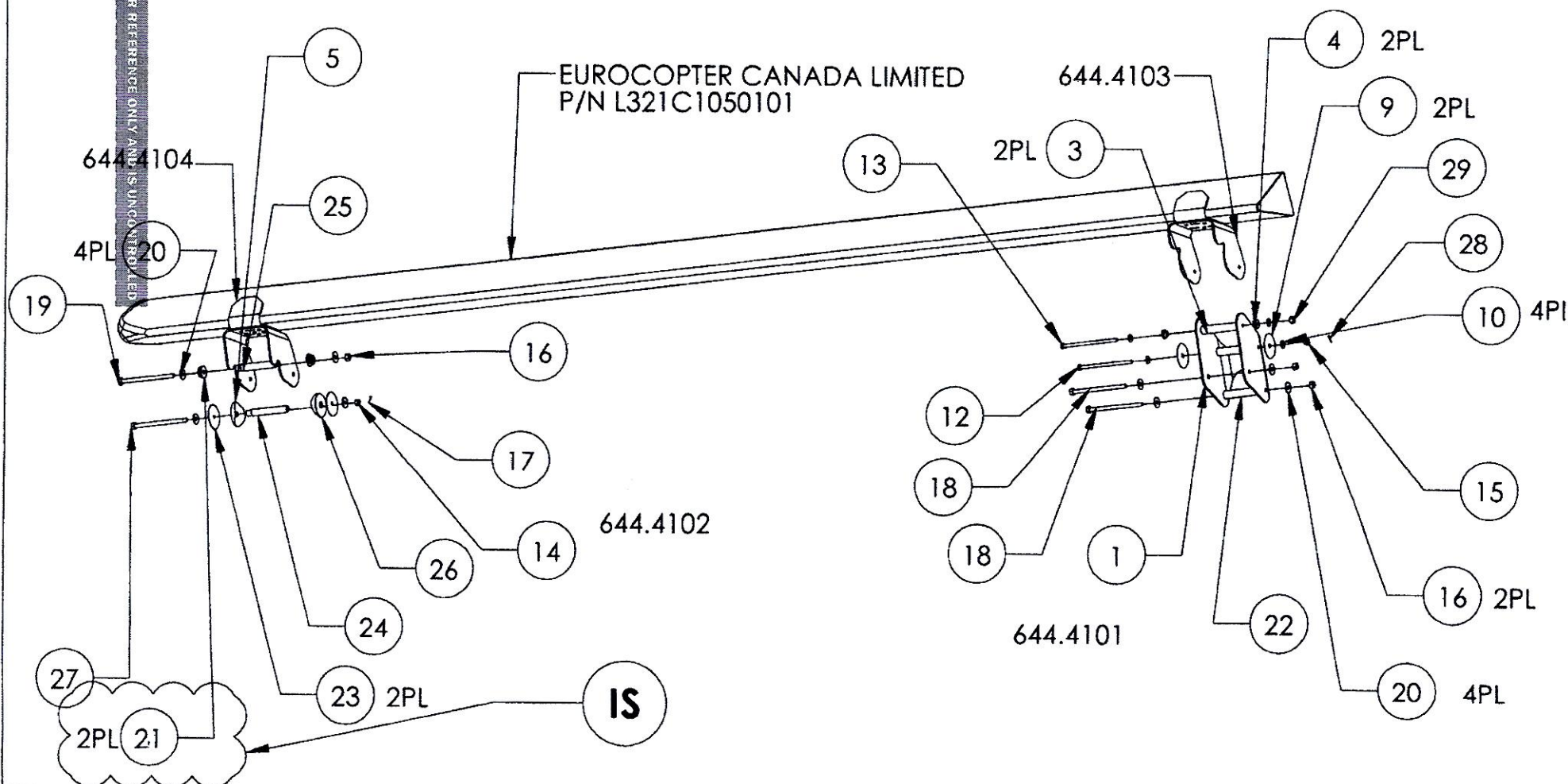
EFF.	NEXT ORDER
------	------------

TRANSACTION CODES (TC):	
A-ADD	C-CREATE
R-REVISE	D-DELETE

REASON: REVISED F/N CALL OUT FROM 22 TO 21

ECR:	13-151
------	--------

SHEET 1, ZONE D1 IS:



DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

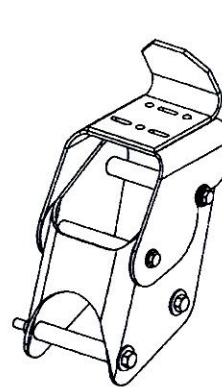
DER REVIEW REQUIRED

☐ YES ☒ NO

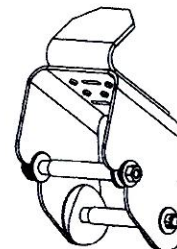
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NOTES:

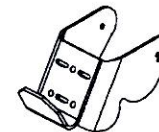
1. IDENTIFY ALL PARTS IN ACCORDANCE WITH MPP-120
- 2 MATERIAL: 2024-T3 ALUMINUM
- 3 MATERIAL: 6061-T6 ALUMINUM
- 4 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III CLASS 2, COLOR BLACK; PRETREAT PR-148 ADHESION PROMOTER, PRIME WITH DESOTO 515X349 IAW BMS 10-79 TYPE III CLASS A GRADE A, POLYURETHANE PAINT CARDINAL 6409-RD03-S WITH CATALYST 340HP.
- 5 MATERIAL: MDS-FILLED NYLON 6/6 SHEET, CUT OD CIRCLE USING 2" GASKET PUNCH, CUT ID HOLE USING 1/4" GASKET PUNCH
- 6 MATERIAL: MDS-FILLED NYLON 6/6 SHEET, CUT OD CIRCLE USING 2" GASKET PUNCH, CUT ID HOLE USING 5/16" GASKET PUNCH
- 7 DIMENSION VALUE HAS FINISH COATING OF 6-10 MIL (.006-.010) TAKEN INTO CONSIDERATION
8. ADD ADDITIONAL WASHER UNDERNEATH CASTLE NUTS IF NECESSARY.
- 9 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III CLASS 2, COLOR BLACK.



644.4101



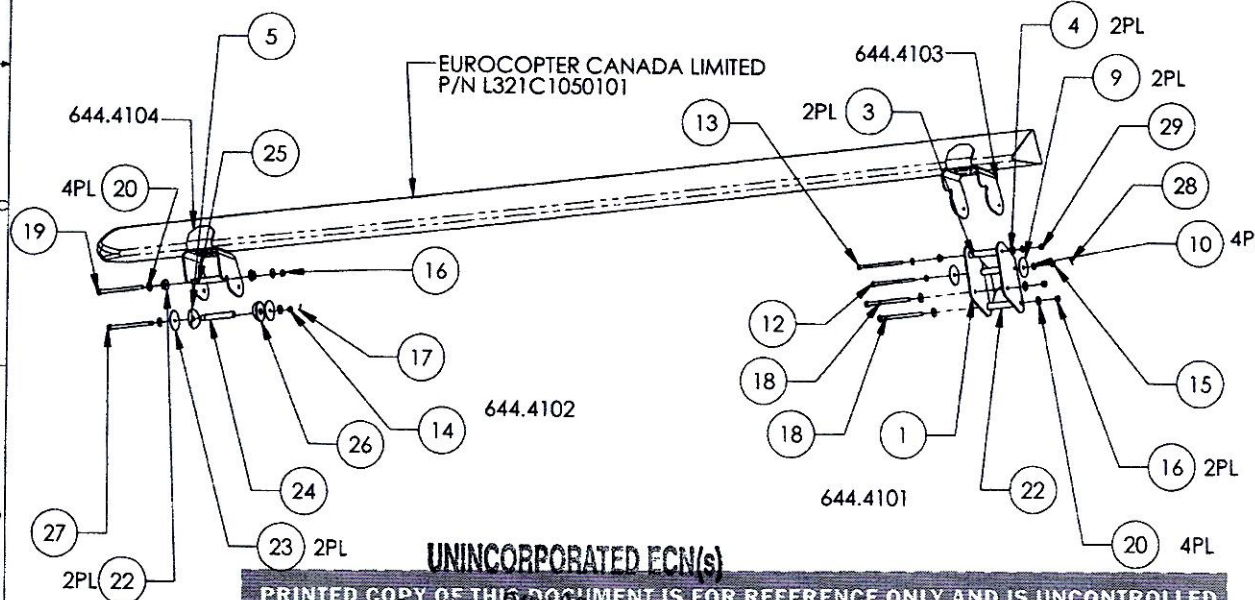
644.4102



644.4103



644.4104



UNINCORPORATED ECN(S)

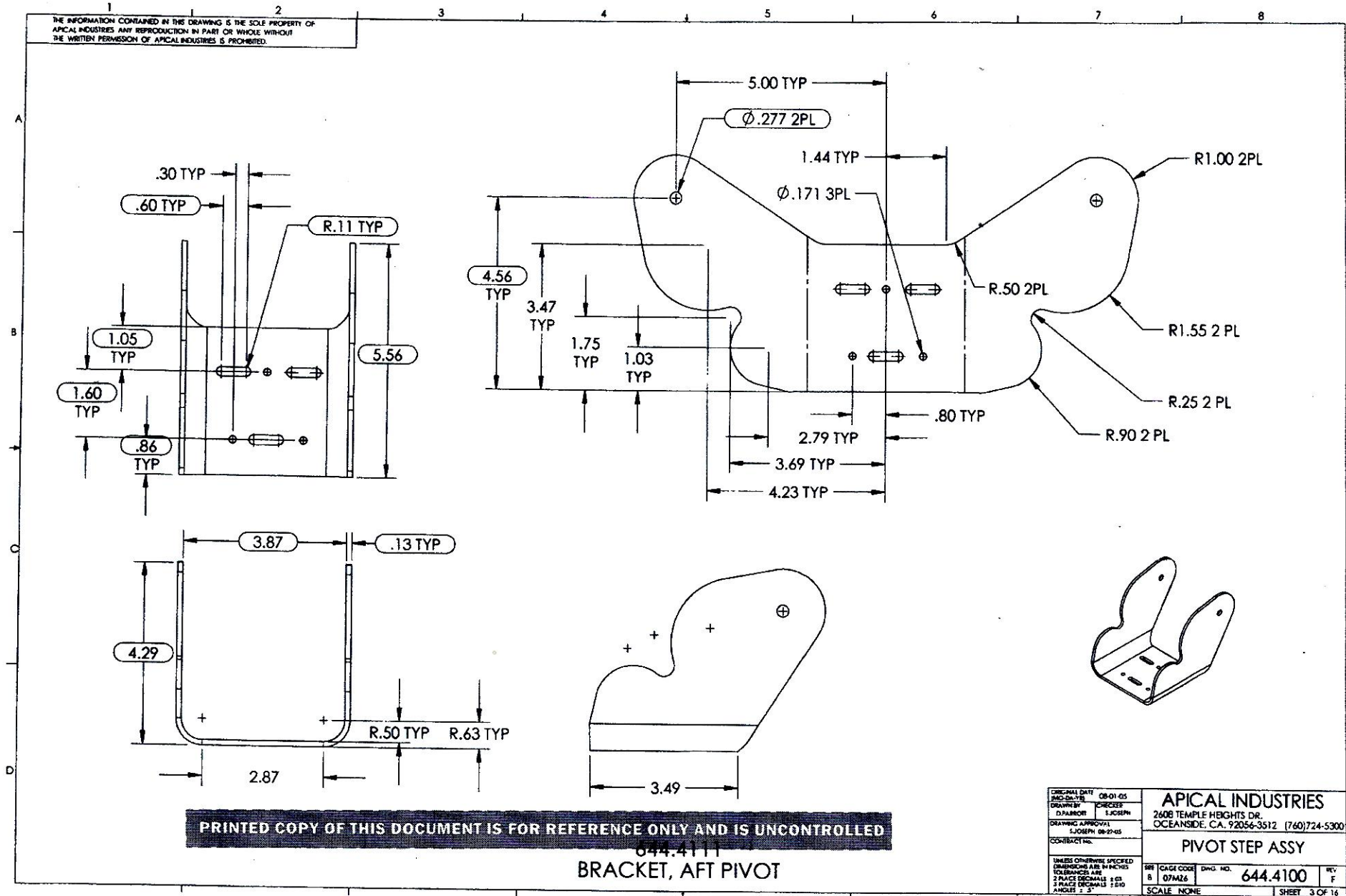
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REV.	DESCRIPTION	DATE	APPROVED
A	INCORPORATED ECH 01310, 01322, 01332, & 01357.	11-29-05	S. JOSEPH
B	INCORPORATED ECH 01370, 01418, 01796, & 01838.	05-21-07	P. BRAVO
C	INCORPORATED ECH 01908, 02326, 03032	12-16-10	P. BRAVO
D	INCORPORATED ECH 03111, 03113, 03308, & 03740	12-16-12	P. BRAVO
E	INCORPORATED ECH 02941	06-19-13	P. BRAVO
F	INCORPORATED ECH 04004	7-29-13	P. BRAVO

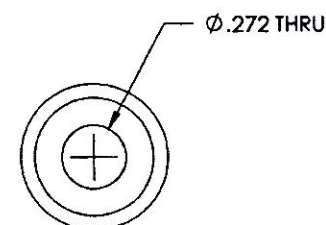
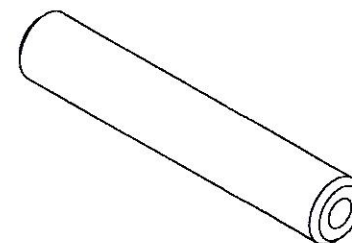
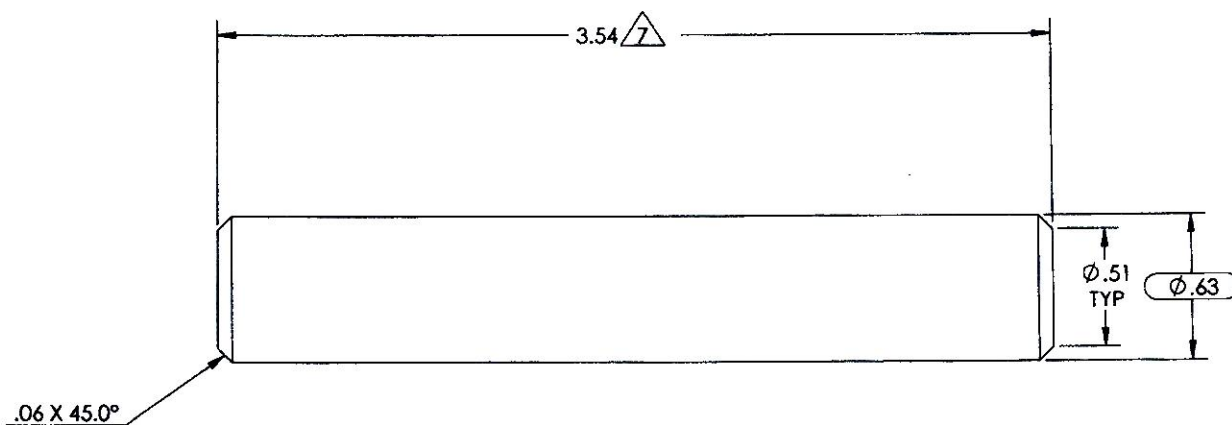
QTY	REV	PART #	DESCRIPTION	MATL	SPEC.
1	29	601.3273	LOCKNUT FULL	MS21044N4	
1	28	601.2640	COILER PIN	MS24665-132	
1	27	601.2328	BOLT, HEX	ANS-45	
1	26	644.4124	WASHER, PIVOT	Δ Δ Δ	
1	25	644.4123	FWD CROSSTUBE BUSHING	Δ Δ Δ	
1	24	644.4122	FWD CROSSTUBE BUSHING	Δ Δ Δ	
2	23	644.4121	WASHER, NYLON	Δ Δ Δ	
1	22	644.4120	SPACER, CROSS-TUBE	Δ Δ Δ	
2	21	644.4119	SPACER, FWD STOP	Δ Δ Δ	
4	20	601.2110	WASHER, FLAT THICK	MS114RC 0463R	
1	19	601.2250	BOLT, HEX	ANS-50	
2	18	601.2249	BOLT, HEX	ANS-43A	
1	17	601.3315	COILER PIN	MS24665-210	
1	16	601.3272	LOCKNUT FULL	MS21044N5	
1	15	601.1435	NUT, HEX CASTLE FULL	AN310-4	
1	14	601.3270	NUT, HEX CASTLE FULL	AN310-5	
1	13	601.3407	BOLT, HEX	AN4-47A	
1	12	601.2434	BOLT, HEX	AN4-45	
6	11	601.2326	RIVET, COUNTERSUNK	MS20436ADS-8	
4	10	601.0863	WASHER, THICK	MS114RC 0463R	
2	9	644.4118	WASHER, NYLON	Δ Δ Δ	
1	8	644.4117	BRACKET, FWD PIVOT	Δ Δ Δ	
1	7	644.4116	BRACKET (SMALL), PWD	Δ Δ Δ	
1	6	644.4115	BRACKET (SMALL), AFT	Δ Δ Δ	
1	5	644.4114	WASHER, PIVOT	Δ Δ Δ	
2	4	644.4113	SPACER, STOP	Δ Δ Δ	
2	3	644.4112	SPACER	Δ Δ Δ	
1	2	644.4111	BRACKET, AFT PIVOT	Δ Δ Δ	
1	1	644.4110	BRACKET (LARGE), AFT	Δ Δ Δ	
1		644.4104	FWD BRACKET ASSY		
1		644.4103	AFT BRACKET ASSY		
1		644.4102	PIVOT STEP ASSY		
1		644.4101	PIVOT STEP ASSY		

QTY		PART #		DESCRIPTION		MATL		SPEC.	
NEXT ASSY (S)		644.1800		PIVOT STEP ASSY					
ORIGINAL DATE		08-01-05		APICAL INDUSTRIES		2608 TEMPLE HEIGHTS DR.		OCEANSIDE, CA. 92056-3512 (760)724-5309	
DESIGNED BY		S. JOSEPH		PIVOT STEP ASSY					
DRAWING APPROVAL		S. JOSEPH 08-29-05							
CONTRACT NO.									
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		TOLERANCES ARE:		3 PLACE DECIMALS ± .03		ANGLES ± .5°	
SCALE: NONE		SHEET 1 OF 16							

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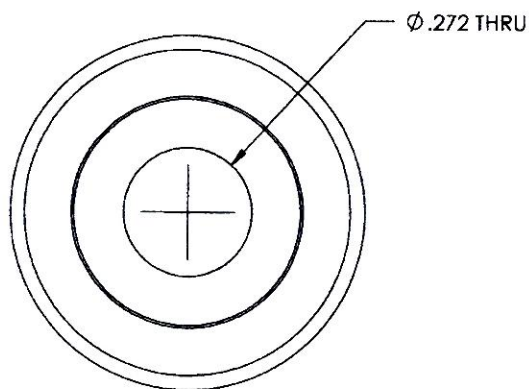
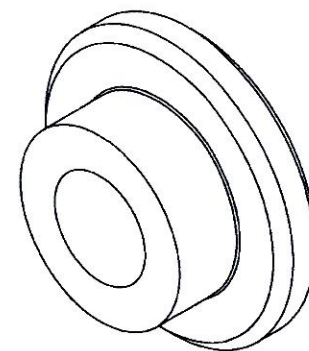
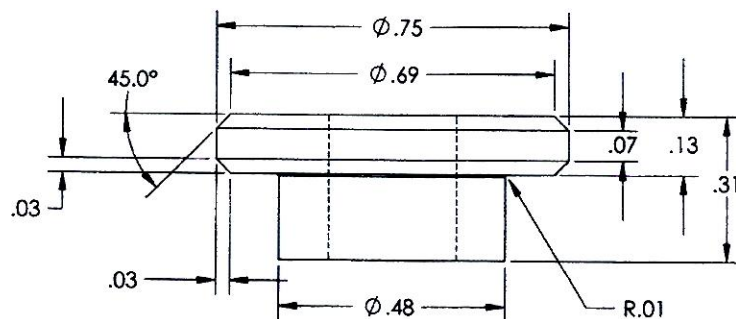


644.4112
SPACER

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ORIGINAL DATE: 05-01-05		APICAL INDUSTRIES	
DRAWN BY: CHECKER		2608 TEMPLE HEIGHTS DR.	
DRAWN BY: S. JOSEPH		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY: S. JOSEPH		PIVOT STEP ASSY	
DATE: 05-29-05		REV. F	
CONTRACT NO.		SCALE: NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS: ±.03 3 PLACE DECIMALS: ±.010 ANGLES: ±.5°		SHEET: 4 OF 16	DWG. NO.: 644.4100

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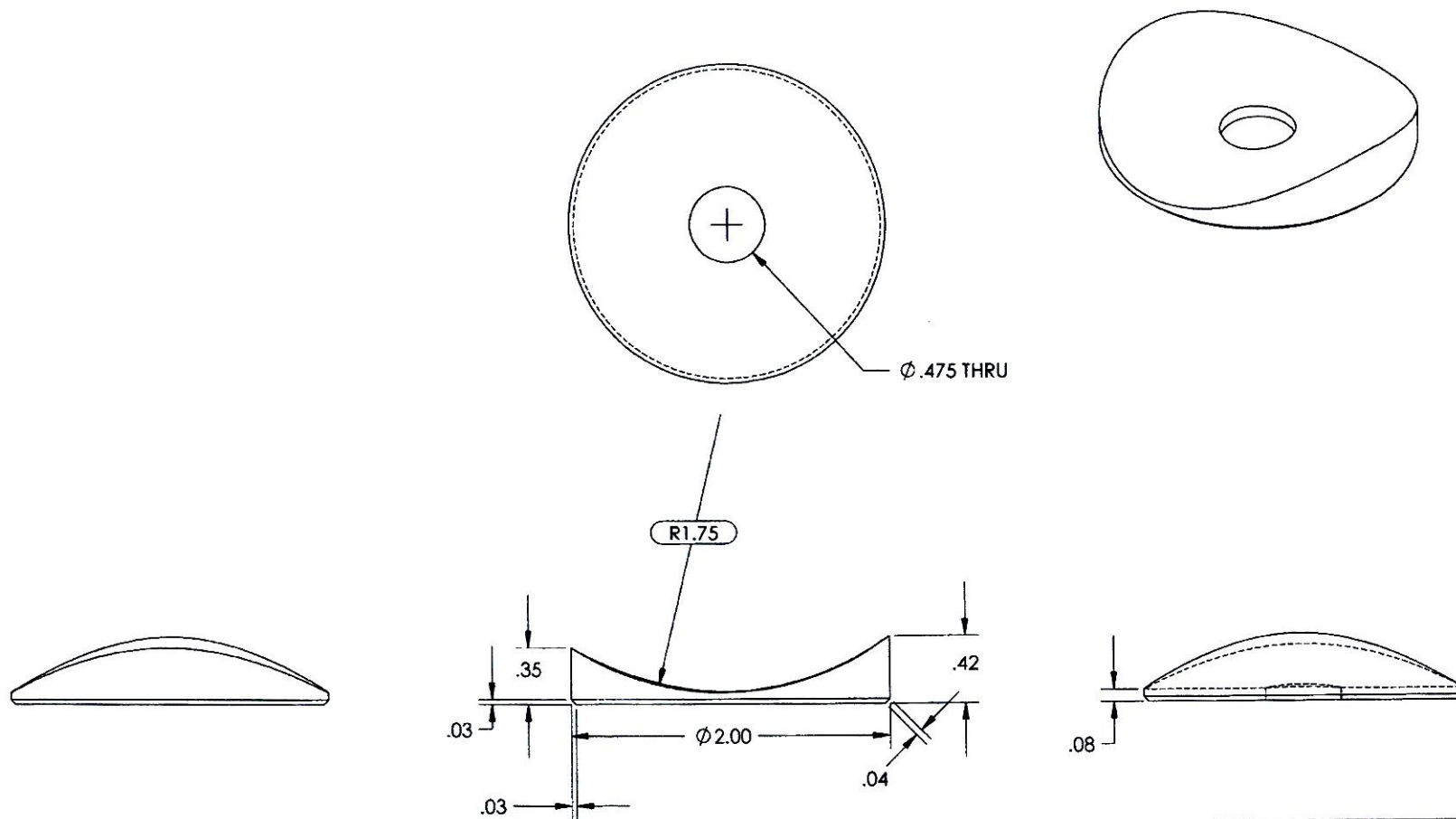


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644.4100
SPACER, STOP

ORIGINAL DATE 08-01-05	APICAL INDUSTRIES		
DRAWN BY D. PARROTT	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300		
CHECKED S. JOSEPH	PIVOT STEP ASSY		
DRAWING APPROVAL S. JOSEPH 08-24-05			
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.010 ANGLES ±.5°	SHEET 8	CAGE CODE 07M26	QWG. NO. 644.4100
	SCALE NONE	REV. F	
		SHEET 5 OF 16	

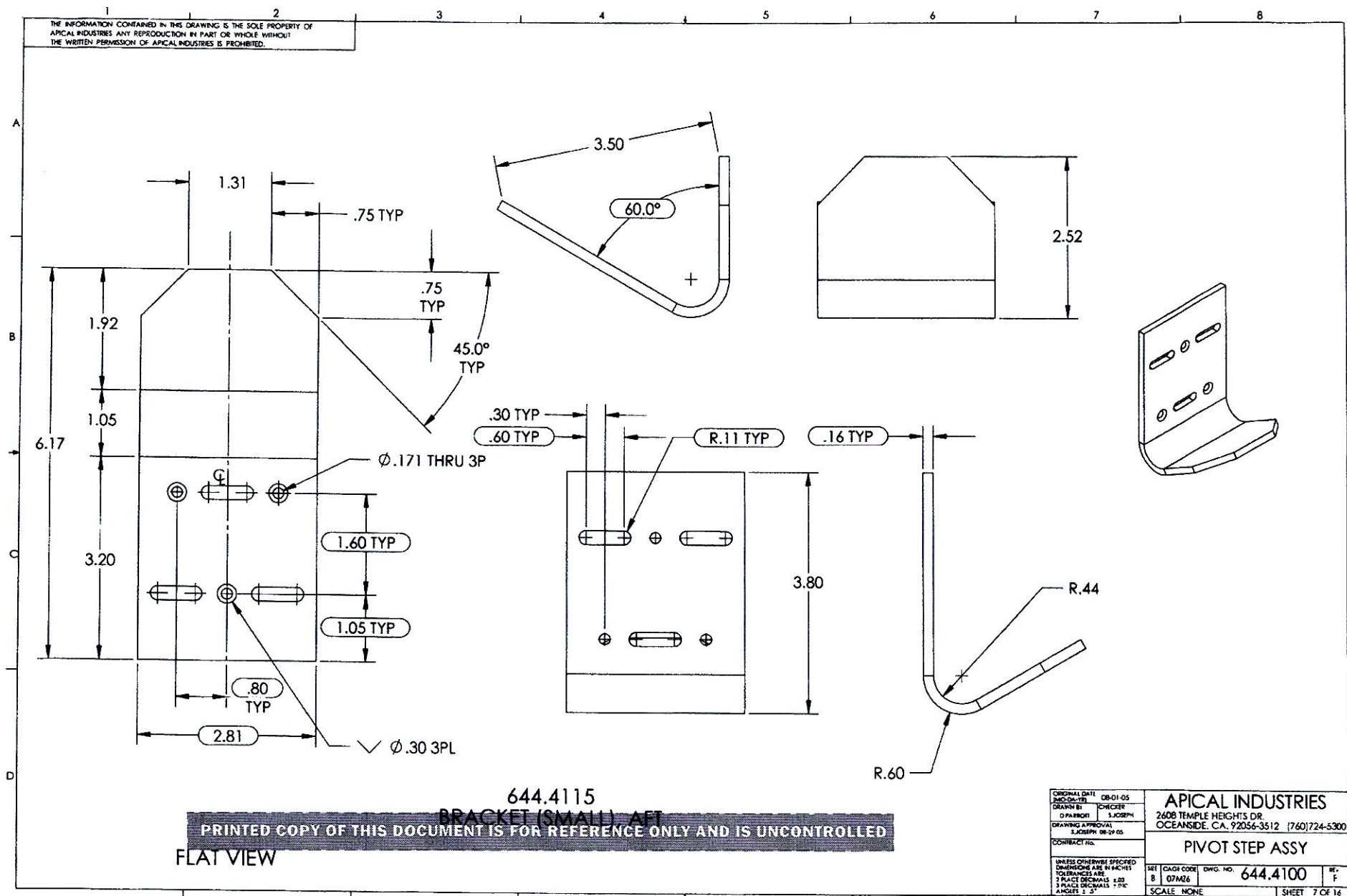
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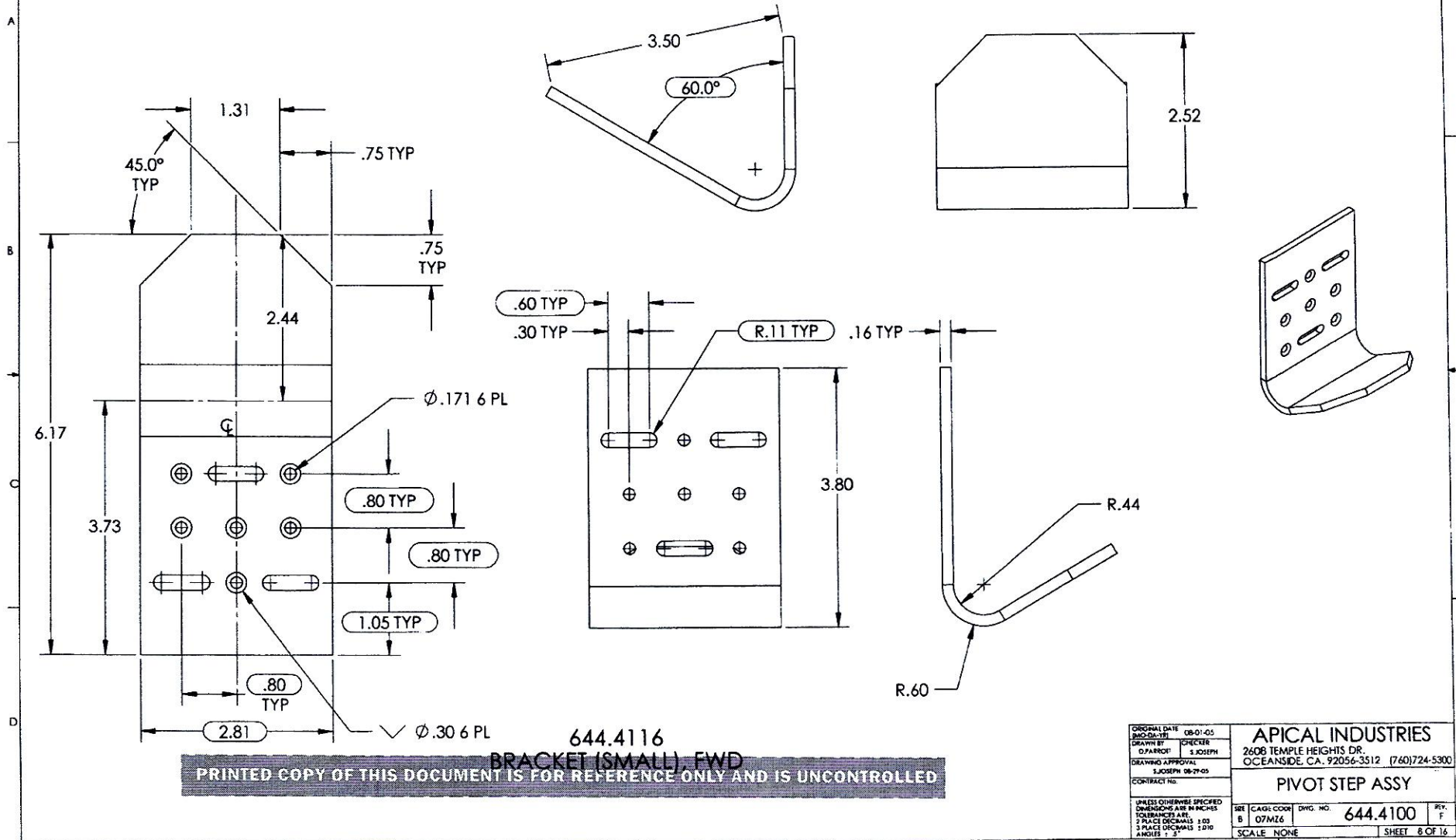
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ORIGINAL DATE 06-01-05	APICAL INDUSTRIES	
DRAWN BY D. PARSONS	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY S. JOSEPH	PIVOT STEP ASSY	
DATE 06-29-05	SIZE B	DWG. NO. 644.4100
CONTRACT NO.	SCALE NONE	SHEET 6 OF 16

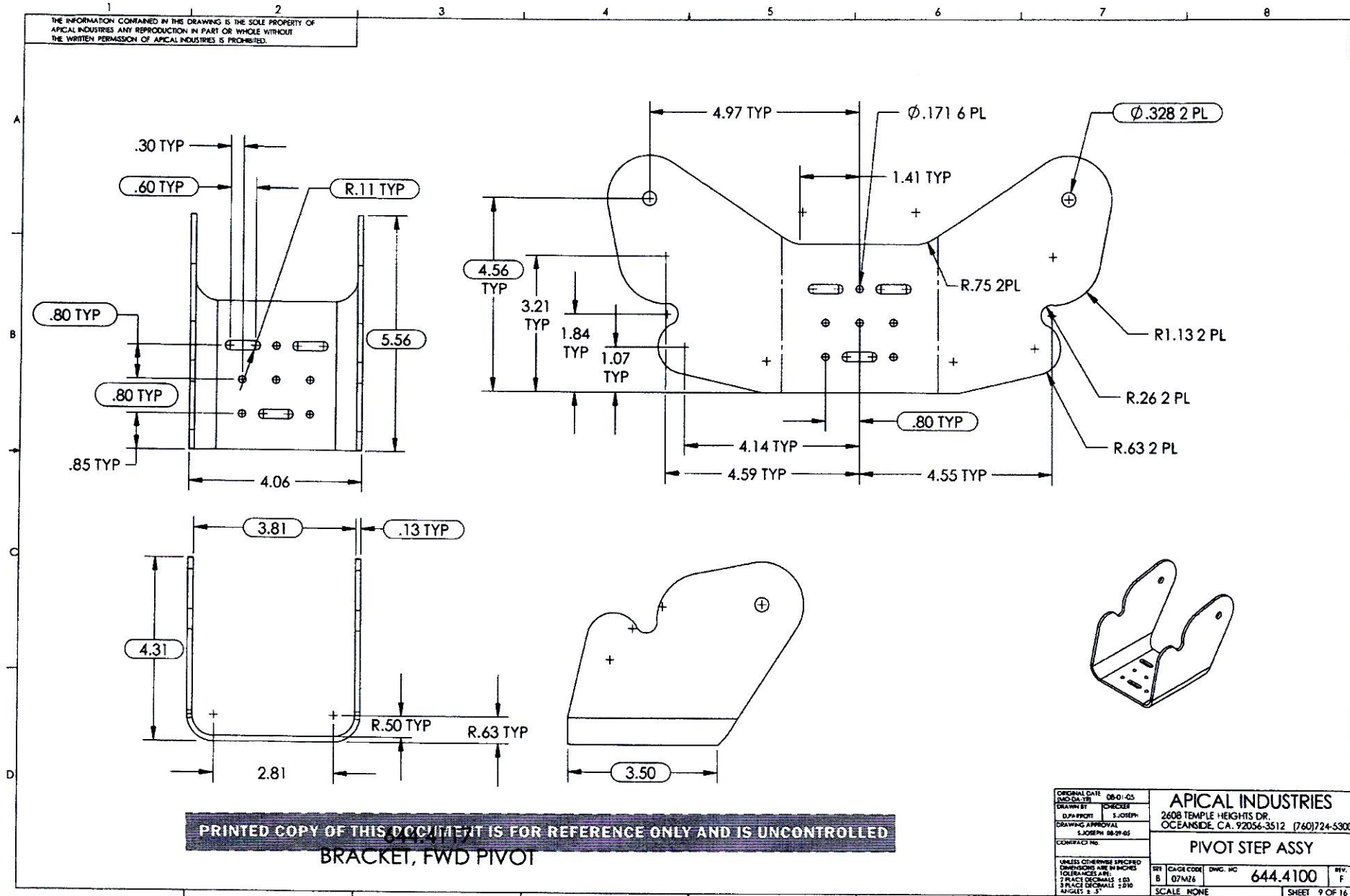
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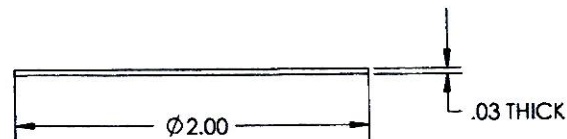
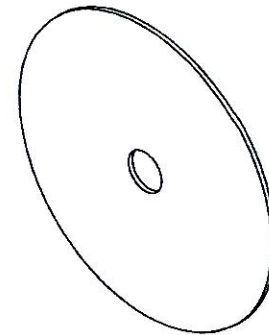
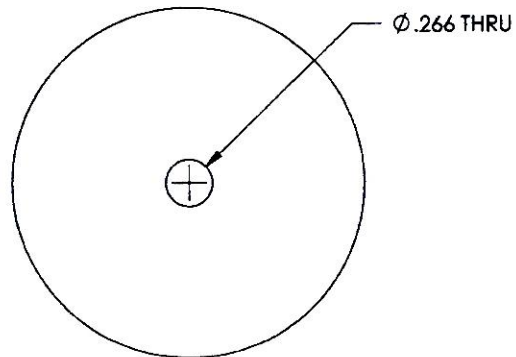


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1 2 3 4 5 6 7 8
A
B
C
D

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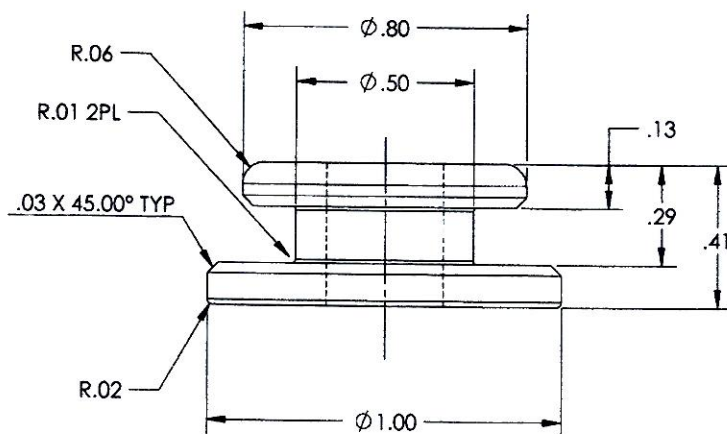
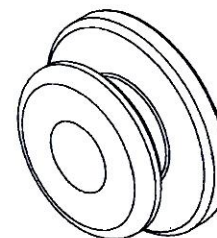
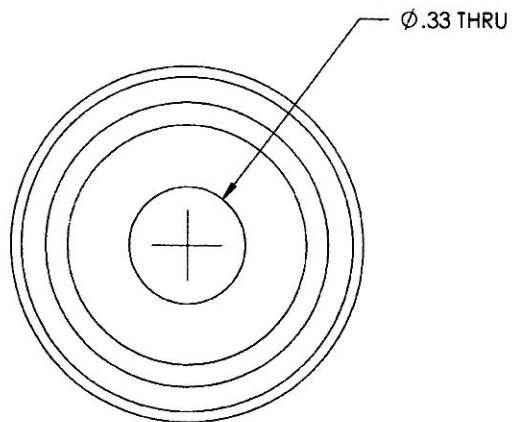


644.4118
WASHER, NYLON

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ORIGINAL DATE UNMODIFIED	08-01-05	APICAL INDUSTRIES	
DRAWN BY D. J. BISHOP	CHECKED S. JOSEPH	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3612 (760)724-5300	
DRAWING APPROVAL S. JOSEPH 08-29-05	CONTRACT NO.	PIVOT STEP ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .001 ANGLES ± .5°		REV. CAGE CODE DWG. NO.	REV. F
		18 07MA16	644.4100
		SCALE NONE	SHEET 10 OF 16

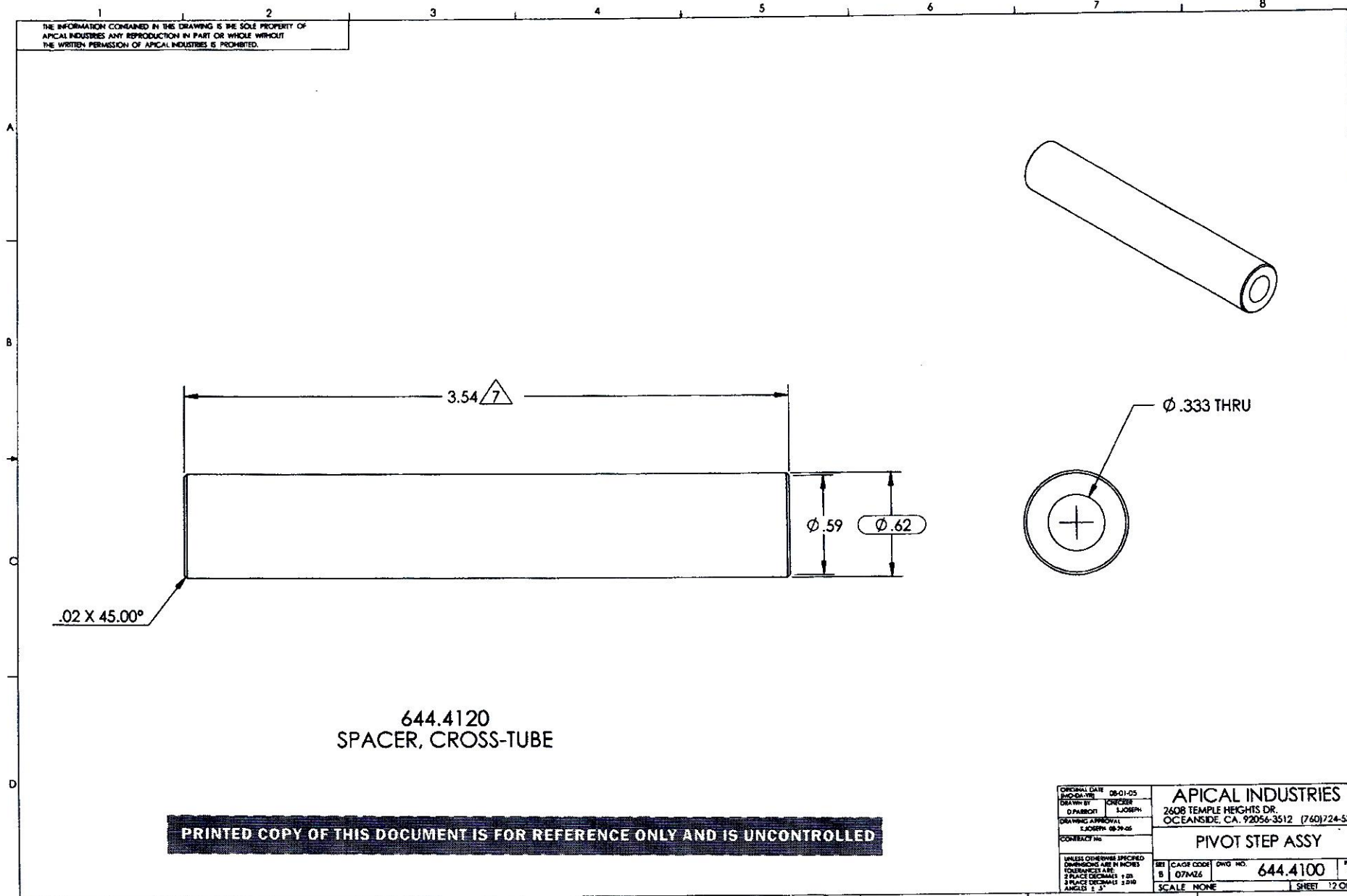
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644.4119
SPACER / FWD STOP
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ORIGINAL DATE 08-01-05		APICAL INDUSTRIES	
DRAWN BY C. CRICK		2608 TEMPLE HEIGHTS DR.	
DRAWN BY J. JOSEPH		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL J. JOSEPH 08-29-05		PIVOT STEP ASSY	
CONTRACT NO.		REV. F	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DECIMALS ±.03 2 PLACE DECIMALS ±.010 ANGLES ±.5°		SHEET 11 OF 16	

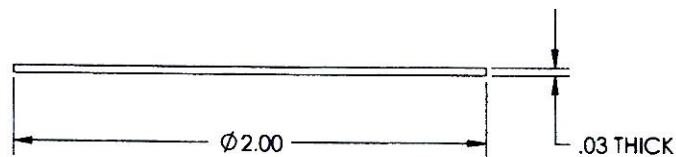
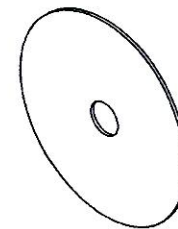
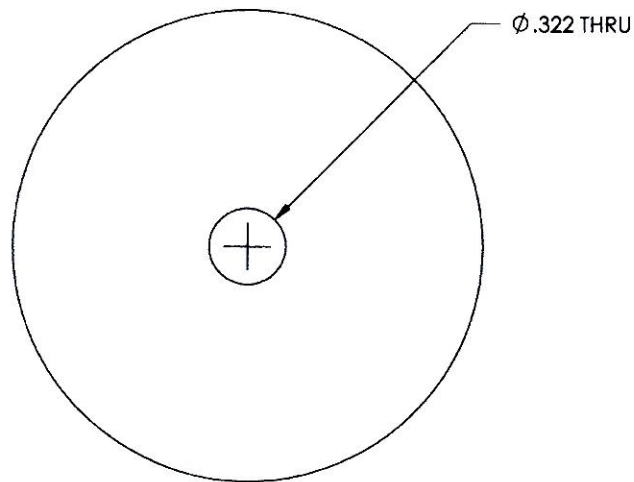
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ORIGINAL DATE 08-01-05	APICAL INDUSTRIES		
DRAWN BY D. HARRIS	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300		
DESIGNED BY E. J. JORDAN	PIVOT STEP ASSY		
CONTRACT NO.	SIT. CAGE CODE B 07M26	DWG. NO. 644.4100	REV. F
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS $\pm .01$ 2 PLACE DECIMALS $\pm .010$ ANGLES $\pm .5^\circ$		SCALE NONE	SHEET 12 OF 16

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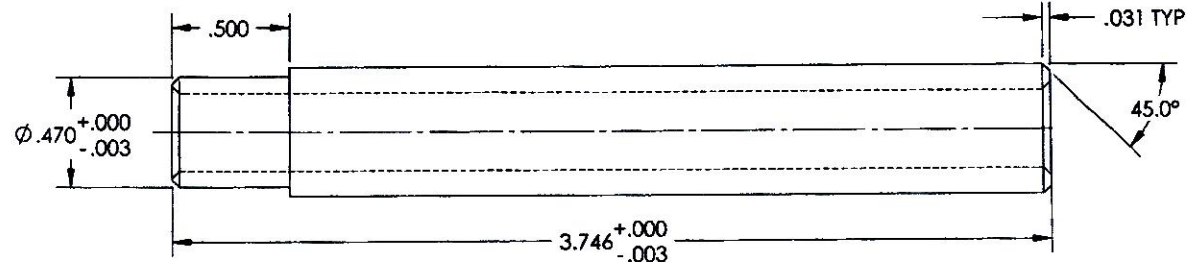
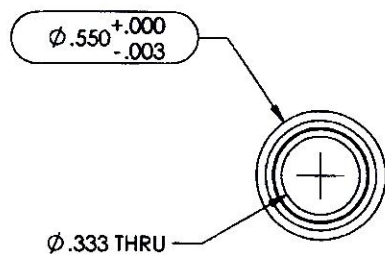
644.4121

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ORIGINAL DATE 08-01-05	APICAL INDUSTRIES	
DRAWN BY D. PARROTT	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL S. JOSEPH 08-29-05	PIVOT STEP ASSY	
CONTRACT NO.	SHEET B	REV. F
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .05 3 PLACE DECIMALS ± .010 ANGLES ± .5°	CAGE CODE 07M26	DRWG. NO. 644.4100
SCALE NONE		SHEET 13 OF 16

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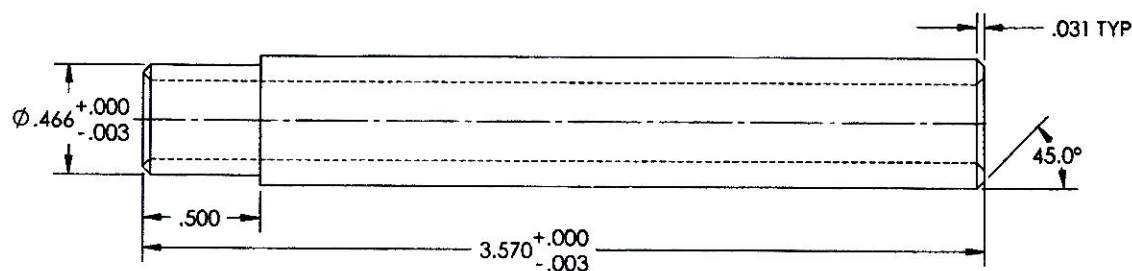
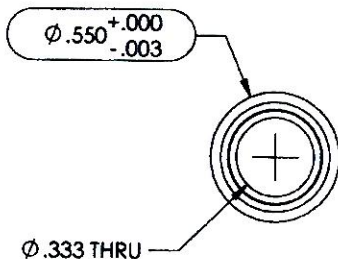


644.4122

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ORIGINAL DATE 08-01-05		APICAL INDUSTRIES	
DRAWN BY D. FURBOTT		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL J. JOSEPH 08-29-05		PIVOT STEP ASSY	
CONTRACT NO.		REV. F	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.010 ANGLES ±.5°		SIC CAGE CODE 07MA26	DWG. NO. 644.4100
SCALE: NONE		SHEET 14 OF 16	

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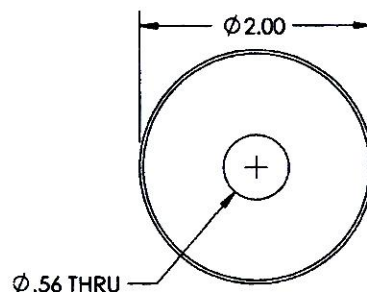
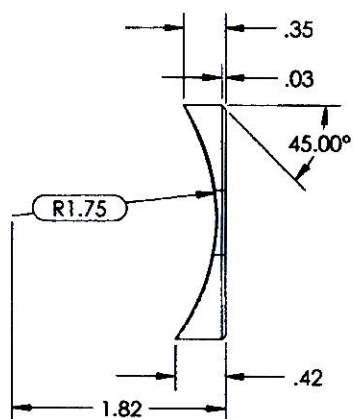


644.4123

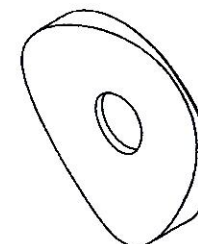
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ORIGINAL DATE 08-01-06		APICAL INDUSTRIES	
DRAWN BY D. PALMISTO		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL L. JOSEPH 08-29-06		PIVOT STEP ASSY	
CONTRACT NO.		SCALE: NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		SHEET 15 OF 16	REV. F

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644.4124



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ORIGINAL DATE: 08-01-05		APICAL INDUSTRIES	
DRAWN BY: J. COHEN		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: J. COHEN		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL: 08-27-05		PIVOT STEP ASSY	
CONTRACT NO.		REV. F	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		REV. CAGE CODE: B 07M26	DWG. NO. 644.4100
SCALE: NONE		SHEET 16 OF 16	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34919**

Purchase Order Date 1/12/2017

PO Print Date 1/12/2017

Page Number 1 of 2

Order From :

VC-ATG001

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA



JAN 12 2017

Contact Name

Vendor Phone 613-446-4544

Ship To Contact

Ship To Phone

Ship Via: VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	154347	644.4117 BRACKET REV. F	1/17/2017 Yes 1/17/2017 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE 3 CLASS 2, COLOR BLACK		7.00	\$7.05	\$49.35
Line Total:							\$49.35
2	154281	644.4110 BRACKET REV. F	1/17/2017 Yes 1/17/2017 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE 3 CLASS 2, COLOR BLACK		7.00	\$7.05	\$49.35
Line Total:							\$49.35
3	154348	644.4111 BRACKET REV. F	1/17/2017 Yes 1/17/2017 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE 3 CLASS 2, COLOR BLACK		7.00	\$7.05	\$49.35

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

8017-01-17

1/12/2017



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 912815

Date: 17-Jan-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	PLEASE REFERENCE THE PACK LIST NUMBER ON ALL CORRESPONDENCE TO THIS SHIPMENT. IF YOU HAVE ANY QUESTIONS, PLEASE CALL AT (613) 446-4544.		
7 ea	Part: 644.4117 Bracket Job: 20580	PO: 34919	Rev: F Line: 1
7 ea	Part: 644.4110 Bracket Job: 20581	PO: 34919	Rev: F Line: 2
7 ea	Part: 644.4111 Bracket Job: 20582	PO: 34919	Rev: F Line: 3
1 ea	Part: ADMINISTRATION FEE ADMINISTRATION FEE Job: 20583	PO: 34919	Rev: N/A Line: 4
DATE: 17/01/2017			
CERTIFIED SIGNATURE:			
RECEIVER SIGNATURE: _____			
Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.			
CERTIFICATE OF CONFORMANCE			
A.T.G. INDUSTRIES INC. CERTIFIES THAT ALL ITEMS IN THIS SHIPMENT CONFORM TO REQUIREMENTS.			
MADE IN CANADA.			

SP17-01-17



07 July 2014

Mr. Pat Smith
Director of Quality
DART Aerospace Hawkesbury
1270 Aberdeen St.
Hawkesbury, ON K6A 1K7

Mr. Smith:

The purpose of this letter is to provide no objection to an alternate means of finishing the metallic parts used as part of the Cable Cutters Kits designed under various STCs for the Airbus Helicopters AS350, EC135, EC145, Bell 206, 407, 212, 412 and AgustaWestland AW119 and AW139.

Many of the drawings currently call for a PRC-DESOTO PR-148 adhesion promoter prior to applying primer. Given the in-house testing conducted by DART Hawkesbury to determine the effectiveness of the adhesion promoter, we have no objection to removing the adhesion promoter from the finishing requirements listed on each drawing.

Feel free to reach out to me with any questions.

Regards,

A handwritten signature in dark ink, appearing to read "P Bravo", with a stylized flourish at the end.

Pablo Bravo
Director of Engineering
DART Aerospace Oceanside (Apical Industries, Inc.)
(760) 724-5300
pbravo@dartaero.com